

## ABSTRACT

Breathable fire-extinguishing compositions and methods for fire prevention and suppression are provided for rooms, houses and buildings, transportation tunnels and vehicles, underground and underwater facilities, marine vessels, submarines, passenger and military aircraft, space stations and vehicles, military installations and vehicles, and all other human occupied objects and facilities. The method allows providing a breathable hypoxic fire-preventative atmosphere at standard atmospheric or local ambient pressure. The method employs an oxygen-extraction apparatus supplying oxygen-depleted air inside a human-occupied area or storing it in a high-pressure container for use in case of fire. A breathable fire-extinguishing composition is introduced for constant fire-preventive environments, being mostly a mixture of nitrogen and oxygen and having oxygen content ranging from 12% to 17%. A fire-extinguishing composition is provided with oxygen concentration under 16%, so when released it creates a breathable fire-suppressive atmosphere having oxygen concentration from 10% to 16% with possible addition of carbon dioxide. A method for automatically maintaining a breathable fire-preventive composition on board a human-occupied hermetic object is provided by introducing inert ballast that automatically maintains oxygen content under the Hypoxic Threshold. A hypoxic fire suppression agent and a method are provided for producing breathable atmosphere with fire-extinguishing properties onboard of an aircraft.

## References

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